

**CENTURION MINES CORPORATION**

331 SOUTH RIO GRANDE STREET, SUITE 201 • P.O. BOX 2365 • SALT LAKE CITY, UTAH 84110

PHONE: 801-534-1120 FAX: 801-534-1129

**FAX TRANSMISSION**

TO:

TOM MUNSON

COMPANY:

DOGM

FAX NUMBER:

359-3940

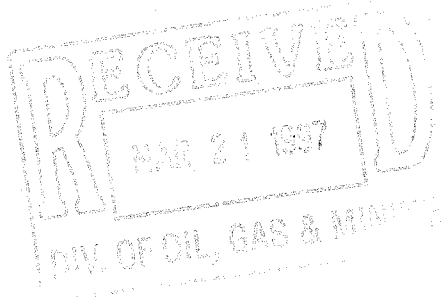
FROM:

BARRY KATONA

DATE:

MARCH 21, 1997Transmitting 3 pages including cover sheet.

Should you not receive all pages or  
there is a problem with the FAX transmission, please  
call (801) 534-1120

**MESSAGE:**

**CENTURION MINES CORPORATION**

331 SOUTH RIO GRANDE STREET, SUITE 201 • P.O. BOX 2365 • SALT LAKE CITY, UTAH 84110 801-534-1120  
FAX: 801-534-1129

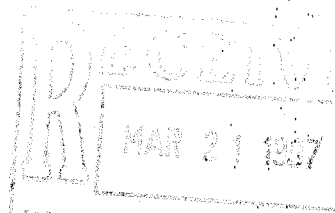
March 21, 1997

To: Tom Munson  
From: Barry F. Katona

I hereby transmit a draft of the reclamation summary for the OK Mine Project. If there are any questions regarding this draft, please contact Rick Havenstrite at 801-867-0557.

Sincerely,

Barry F. Katona  
General Manager



March 21, 1997

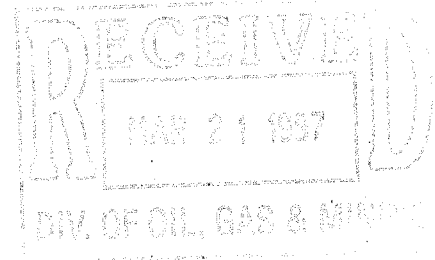
## Reclamation Summary

DRAFT

	Phase 1		Phase 2		Phase 3		Total	
	Dist.	Recl.	Dist.	Recl.	Dist.	Recl.	Dist.	Recl.
Heap	69.9	69.9	0	0	0	0	69.9	69.9
Roads	11.3	11.3	0	0	7.7	7.7	19.0	19.0
W. Dumps	18.1	18.1	48.1	48.1	14.2	14.2	82.4	78.9
Pits	7.8	1.1*	11.0	2.0	67.6	6.2	84.4	10.8
Misc.	19.4	19.4	0	0	0	0	19.4	19.4
Total	126.5 ac.	119.8 ac.	59.1 ac.	50.1 ac.	89.5 ac.	28.1 ac.	275.1 ac.	198.0 ac.

Dist.: Disturbed acreage  
Recl.: Reclaimed acreage  
ac.: acres

\*The area not reclaimed includes highwalls affected during dump mining.



M/001/039

March 20, 1997

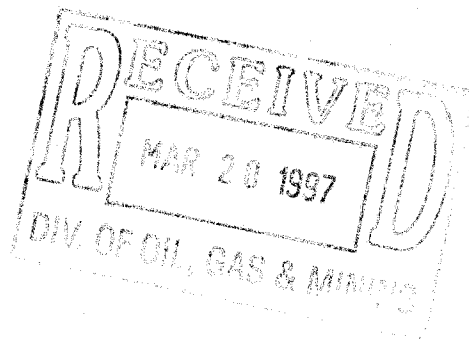
To: Tom Munson and Tony Gallegoes  
From: Rick Havenstrite  
Subject: Summary of the OK Mine Project

The following is offered as a condensed operational summary and is consistent with all aspects of the permit submitted and currently under review. It is meant as an aid in compiling the permit and calculating the bonds and may be inserted, at your discretion, into the original report as an executive summary.

The bond was calculated in three separate phases. Over the life of the project, this allows for a much easier total project for both the regulators and the operator. It requires only 1 document and typically can be approved prior to the first phase. It allows for maximum flexibility for the operator as specific sequencing of mining can be delayed until more information is available. Obviously, a bond covering each phase must be in place prior to commencement of activity in that phase.

The three basic phases of this development include:

- 1) The full heap leach, process plant, and stockpile mining, leaching, and reclamation.
- 2) The OK Pit mining- widening and deepening.
- 3) The Mary 1 Zone (Eastern Extension) mining, leaching, and reclamation.



**Summary-** The OK mine development has been divided into 3 separate phases to allow for simplified bonding and regulatory compliance.

**Phase 1-** The first phase includes the construction of all process facilities including the entire SX/EW facility, office, the entire permitted pad (2.35 million square feet) and the mining and processing of approximately 2 million tons of previously mined stockpiles. This phase of the project is expected to last 1 year.

Mining during this phase will be restricted to reclaiming old (existing) stockpiles from around the old OK Pit. There will be no new mining during this phase and crushed overliner and clay will be purchased and placed by local contractors.

The pad will be constructed with a composite liner consisting of clay and a 60 mil HDPE liner overlaying a gravel and pipe leak detection layer. Under the leak detection layer will be compacted low permeability soils and bedrock. The top foot of topsoil will be saved in all newly disturbed areas and in all other areas to be disturbed where topsoil exists.

Mining will be accomplished by 50 ton end dump trucks and 7.5 cubic yard loaders. Approximately 2 million tons of previously mined material will be loaded onto the pads during this phase.

The ore will be loaded directly onto the heaps with the end dump trucks in 20 foot lift heights. On the pads, the ore will then be leached with a weak (.75%) sulfuric acid solution. The ore is likely to leach for 10 or more years economically. The leach solution will report to process ponds down gradient from the heap leach pads. Solution will be pumped from these ponds to the SX/EW plant where copper will be selectively concentrated and electroplated. Approximately 20-30,000 pounds of 99.998% pure copper will be produced from the facility each day.

As leaching is completed on certain sections of the pad, rinsing will commence. This rinsing will be by fresh water with a possibility of lime addition. At closure, 20% of the pad will remain to be leached.

Following complete leaching and rinsing, the pad slopes will be re-graded to a maximum 3 to 1 slope and properly prepared for re-topsoiling. Heap slopes during the operation will be 2.5 to 1.

The plant and facilities will be demolished, waste and debris buried or hauled away, and the entire plant area, ponds, and heap leach pad will be re-topsoiled to a depth of at least 1 foot.

The area will then be re-seeded with an approved seed mix.

There will be no waste dumps created during this phase.

**Phase 2-**

Phase 2 includes the deepening and widening of the OK Pit. We anticipate this phase will be started in the spring or summer of 1998. Dotson will allow adequate time to get the bond posted and approved.

During this phase, conventional mining including drilling and blasting will start. Drilling will be performed by a conventional blasthole drill. Bench heights will 20 feet high. Mining will again be by trucks and loaders. The ore will be stacked, uncrushed, on the heap leach in 20 foot lifts. Topsoil will of course be removed prior to mining.

Considerable waste will be mined during this phase and the construction and reclamation of these dumps is the subject of most of the phase 2 bond. The waste dumps will again be end dumped from trucks. The angle of repose on these dumps will be approximately 1 : 1. This is the angle used prior to reclamation.

Reclamation and bonding were calculated assuming the waste dump slopes are to be regraded to a 3 : 1 slope. Again, one foot of topsoil will be placed on the dumps.

The pit ramps and bottoms will be re-topsoiled. The entire area will be re-seeded. An attempt will be made to re-seed highwalls.

The Bond calculation for Phase 2 includes the following (heap related costs are already bonded in phase 1):

Regrading-	\$ 40,552.84
Topsoil Replacement-	74,005.50
Contour Scarification	4,276.71
Seed and planting	6,942.99
Project Supervisor	6,118.91
 Total phase 2	 \$131,856.95 (prior to contingency and escalation)

**Phase 3**

Phase 3 includes the development of the new eastern extension of the orezone called the Mary 1. This pit will actually merge with the OK Pit on the eastern side of the OK Pit.

Mining will be accomplished again in the same manner as Phase 2. There is a considerable amount of topsoil and area to replace it as this pit is very shallow but covers a large area.

The bond calculation for Phase 3 includes the following( again, heap related costs are already boded in phase 1):

Mobilization-	\$ 636.00
Regrading-	1,161.04
Topsoil Replacement-	138,922.42
Contour Scarification	6,448.11
Seed and Planting	10,566.97
Revegetation Monitoring	1,752.30
Project Supervisor	9,312.76
<b>Total Phase 3</b>	<b>\$178,799.60</b>

Bonding for Phase 1 will include:

Reclamation:	
Mobilization-	\$ 636.00
Regrading-	22,193.07
Removal of Structures-	42,950.00
Topsoil Replacement-	170,065.07
Contour Scarification-	9,256.17
Seed and Planting -	15,168.73
Project Supervisor-	13,368.33

Total reclamation-	\$273,637.37
--------------------	--------------

Rinsing:	
Lime-	\$ 62,500.00
Generator rental-	4,980.00
Generator fuel/oil-	35,208.00
Pump rental/maint.-	7,380.00
Supervisor-	20,544.00
Laborers-	31,056.00
Misc.-	6,000.00

Total Rinsing-	\$167,668.00
----------------	--------------

Total Reclam./Rinse	\$441,305.37 (Prior to Contingency and escalation)
---------------------	--

It is important to understand that Dotson is bonding for the full heap and the full life of the heap in phase 1. It includes the reclamation of 10 million tons of ore and not the 2,000,000 within the area of disturbance. Disturbances related to further mining will be bonded in phase 2 and 3. All area to be disturbed or potentially to be disturbed for the initial phase, stockpile removal, heap, and facility construction, was calculated for the phase 1 bond.



## SUMMARY OF RECLAMATION COSTS

Task	Phase 1	Phase 2	Phase 3	Total
Mobilization	636.00	0.00	636.00	1272.00
Regrading	22193.07	40552.84	11161.04	73906.95
Removal of Structures	42950.00	0.00	0.00	42950.00
Topsoil Replacement	170065.07	74005.50	138922.42	382992.99
Contour Scarification	9256.17	4236.71	6448.11	19940.99
Seed and Planting	15168.73	6942.99	10566.97	32678.69
Revegetation Monitoring	0.00	0.00	1752.30	1752.30
Project Supervisor	13368.33	6118.91	9312.76	28800.00
<b>Phase Totals</b>	<b>273637.37</b>	<b>131856.95</b>	<b>178799.60</b>	<b>584293.92</b>

*A00*  
*Rising*

**RECLAMATION COST**

584293.92

**Contingency (10%)**

58429.39

**TOTAL SURETY COST**

642723.31

**Escalation (5 years @ 2.58%)**

87301.34

**ADJUSTED SURETY COST**

730024.65

**TOTAL ACREAGE**

275

**TOTAL COST PER ACRE**

2654.64

Tom -

I HAVE ATTACHED THIS AS  
AN EXAMPLE. I HAVE EVERY  
DUMP WITHIN THE DISTURBANCE  
AREA DETAILED LIKE THIS. YOUR  
~~THESE~~ INITIAL PLAN REVIEWS  
DID NOT INDICATE THE NEED  
FOR THIS LEVEL OF DETAIL  
ON THE CLEAN-UP OF THESE  
OLD EXISTING DUMPS -

ALL ARE AVAILABLE IF YOU  
NEED THEM - I WILL BRING  
THEM THERE TONITE IF  
NECESSARY -

Rick

# OK Mine - Southwest Dump (east-to-west sections)

Rock Factor (cubic feet per ton) 15  
 Unit Weight (pounds per cubic foot) 133  
 Section Interval (feet) 40

Volume #	Area Left (sq. ft.)	Area Right (sq. ft.)	Area Ave (sq. ft.)	Volume (cu. ft.)	Weight (tons)
1	0	576	288	11520	768
2	576	1080	828	33120	2208
3	1080	6449	3764.5	150580	10039
4	6449	7436	6942.5	277700	18513
5	7436	11675	9555.5	382220	25481
6	11675	16142	13908.5	556340	37089
7	16142	17974	17058	682320	45488
8	17974	20292	19133	765320	51021
9	20292	20253	20272.5	810900	54060
10	20253	20962	20607.5	824300	54953
11	20962	20201	20581.5	823260	54884
12	20201	19388	19794.5	791780	52785
13	19388	17729	18558.5	742340	49489
14	17729	14094	15911.5	636460	42431
15	14094	8554	11324	452960	30197
16	8554	9898	9226	369040	24603
17	9898	14730	12314	492560	32837
18	14730	12634	13682	547280	36485
19	12634	9990	11312	452480	30165
20	9990	3950	6970	278800	18587
21	3950	0	1975	79000	5267
Totals				1.02E+07	677352

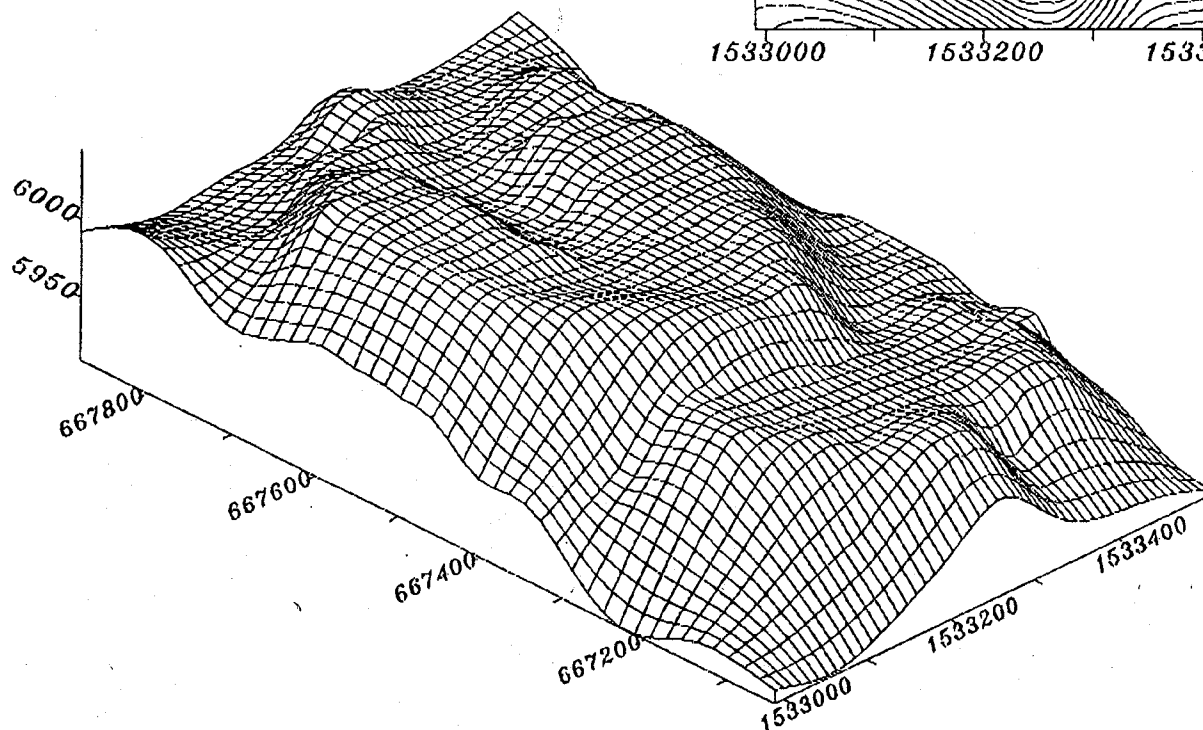
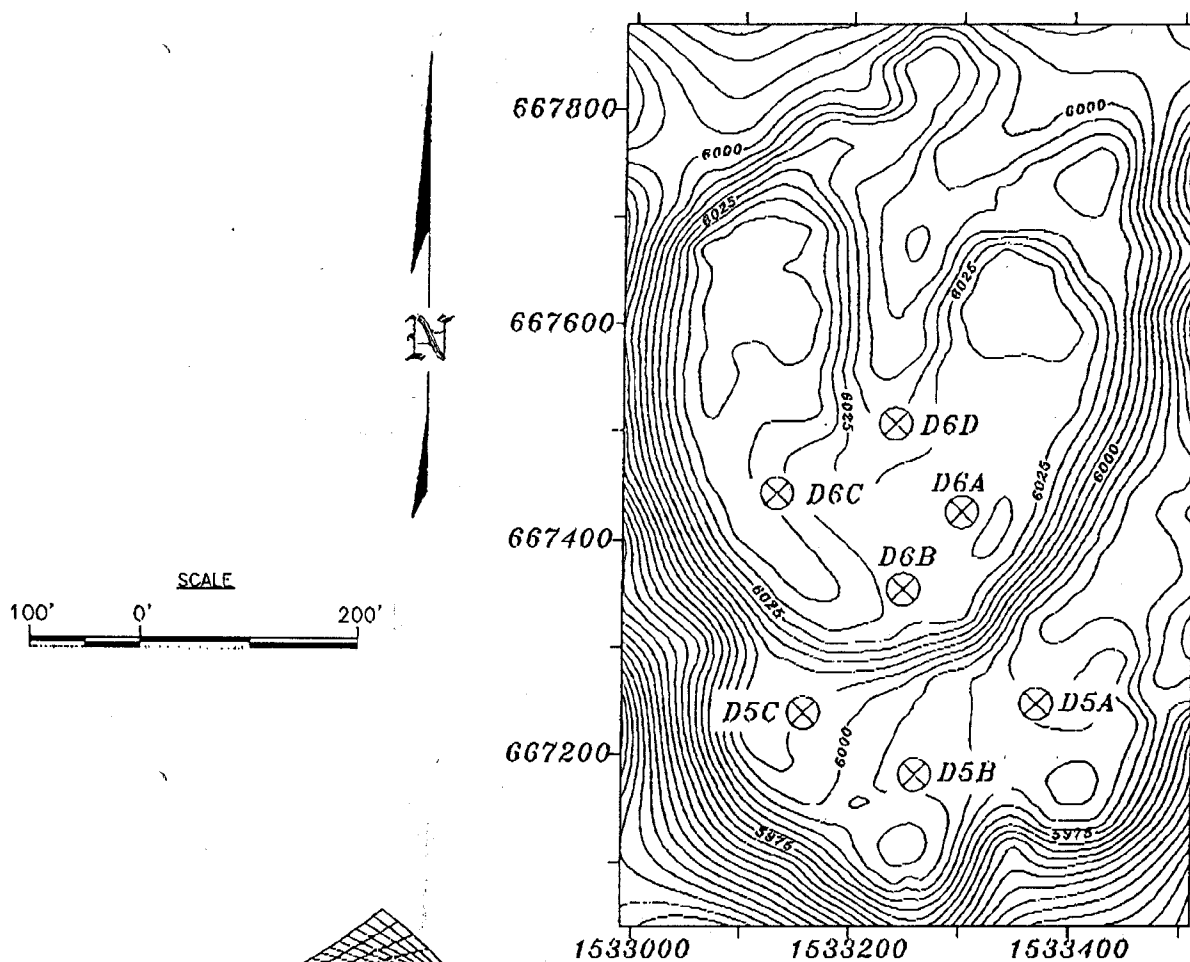
10.2

This dump contains about

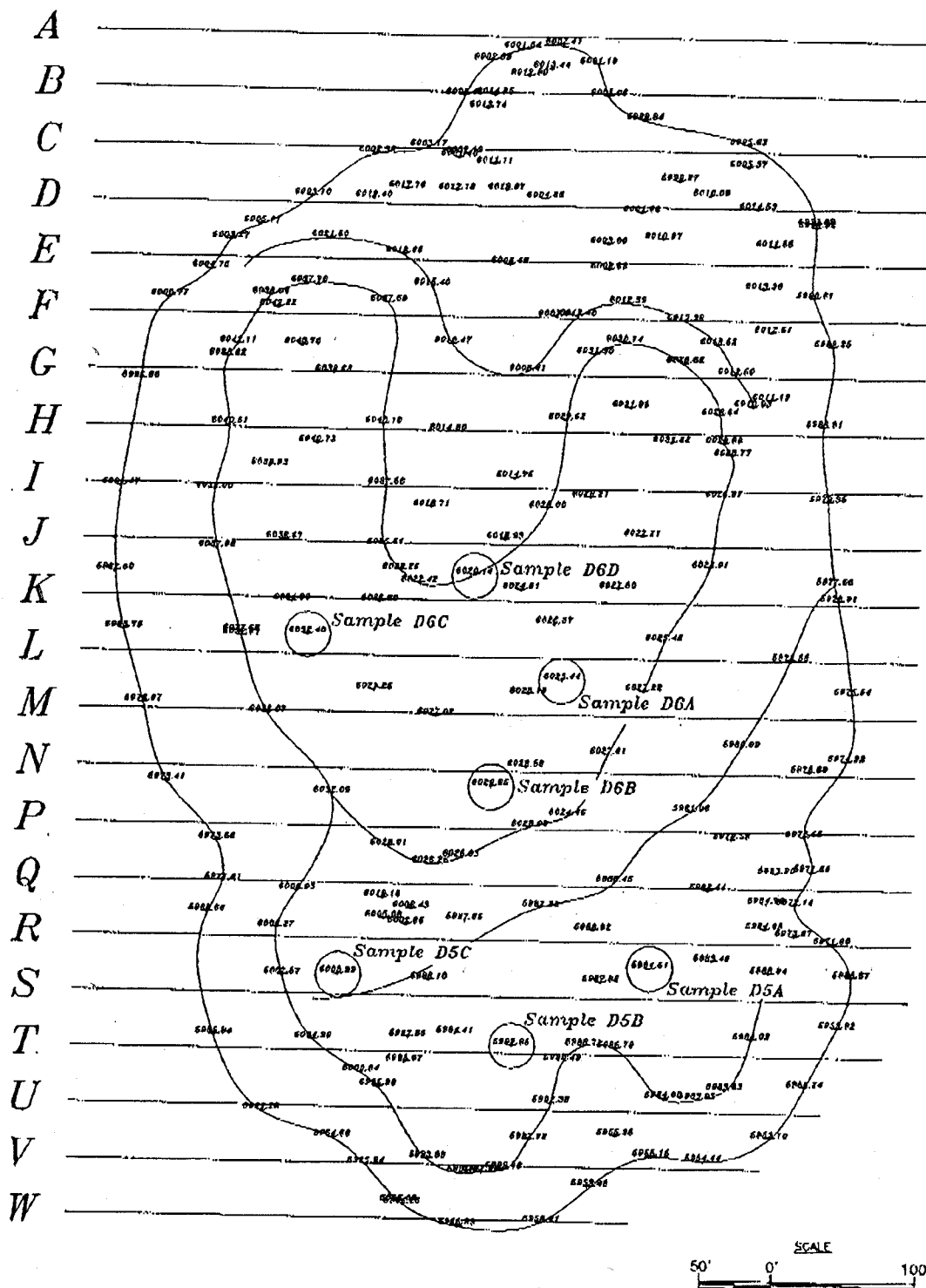
10.68

million tons of fill

# Southwest Dump Overview



# Southwest Dump Section Plan

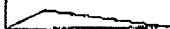


N

# Southwest Section Profiles

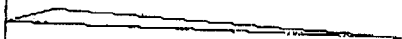
## Section B

Area = 576



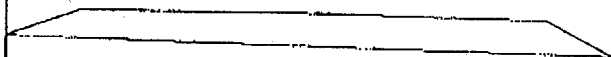
## Section C

Area = 1080



## Section D

Area = 6449



## Section E

Area = 7436

